ARCH 3502 Syllabus-Hill

ARCH 3502: Architectural Design Studio V (5:2:8). Building systems. Teaches design skills centered on the building as a technological system and ecological device. Considers site and building details.

Course Information
ARCH 3502 Architectural Design Studio V.
Prerequisite: ARCH 3501
Credits: 5 semester credit hours
Meeting Times: MWF 01:00-4:20 PM

Glenn Hill’s Architectural Philosophy: My theoretical position about architecture I call Integral Architecture. This position fundamentally draws from the science of general systems theory and the philosophical works of Ken Wilber. The architectural roots of integral architecture are based on Vitruvius’s position, a complete work of architecture is essentially always concerned with “firmitas, utilitas, venustas” (firmness, utility and beauty); Frank Lloyd Wright’s position “form and function are one”; Buckminster Fuller’s concept of synergy – “the behavior of whole systems are indeterminate by the behavior of their parts taken separately”; and Renzo Piano’s belief “that the architect is first and foremost a builder, but also should be a poet, and above all a humanist”.

So we can’t go backwards, we can only go where the evolutionary trajectory is taking us and attune our ideas about ourselves and our existence to that course. Thom Mayne, Architect, Morphosis

Studio (Course) Pedagogy: This studio will take Kenneth Frampton’s position that architecture should be first an act of construction, a tectonic and not a scenographic activity. The learning objectives of ARCH 3502 requires a focus on structural systems of architecture (firmitas), accessibility and building codes (utilitas) and the tectonics of structure (venustas). These objectives will be based on active learning and critical thinking principles and methods of instruction. The primary modality for learning will be a series of short active learning projects (assignments), which will build the students understanding of the tectonics of structural systems. This will develop into a larger architecture project, which will require the student to integrate the knowledge from the previous small projects into complete work of architecture. The students will use writing, diagramming, digital graphics, and physical modeling as methods for learning.

EDUCATIONAL OBJECTIVES:

- To understand the concepts of building systems, including the structural, enclosure, mechanical and interior systems.
- To engage the creative process through active studying, learning, reflecting and critical thinking.
- To understand how design informs and affects daily living in a larger context.
- To identify design idea/concepts through the use of precedents and examples.
- To develop a basic understanding of materials and structure in the design process.
- To learn about basic building and life safety codes.
• To develop the ability of giving/taking feedback (critique) to/from fellow students, outside reviewers and the instructor, without taking it personally.

PRIMARY LEARNING OUTCOMES:
ARCH 3502 addresses the following NAAB criteria http://www.naab.org/ required by NAAB. This course must show physical and visual evidence these criteria are addressed.

A.1 Professional Communication Skills: Ability to write and speak effectively and use representational media appropriate for both within the profession and with the general public.
A.2 Design Thinking Skills: Ability to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test alternative outcomes against relevant criteria and standards.
A.6 Use of Precedents: Ability to examine and comprehend the fundamental principles present in relevant precedents and to make informed choices about the incorporation of such principles into architecture and urban design projects.
B.3 Codes and Regulations: Ability to design sites, facilities, and systems that are responsive to relevant codes and regulations, and include the principles of life-safety and accessibility standards.
B.4 Technical Documentation: Ability to make technically clear drawings, prepare outline specifications, and construct models illustrating and identifying the assembly of materials, systems, and components appropriate for a building design.
B.7 Building Envelope Systems and Assemblies: Understanding of the basic principles involved in the appropriate selection and application of building envelope systems relative to fundamental performance, aesthetics, moisture transfer, durability, and energy and material resources.
B.8 Building Materials and Assemblies: Understanding of the basic principles used in the appropriate selection of interior and exterior construction materials, finishes, products, components, and assemblies based on their inherent performance, including environmental impact and reuse.

COURSE CONTENT & GRADES:
There are five types of student Learning activities which are graded during the course. These learning activities are integrated into the PROJECT. The project has two stages during the semester. The first Project stage is approximately 7 weeks long and the second is approximately 8 weeks long.

General Teaching Methods
Arch 3502 is a design class that requires a substantial dedication and investment of student time, skill, and critical thought both during and after official studio hours. As a part of design studio instruction, students are required to participate in all lectures, discussions, and field trips, as well as group and individual critiques of assignments and projects. Production and hard work are important keys to success in this studio. Specific drawings and models will be requested during studio project phases. Studio often begins with a group pinup, followed by assignments, lectures, presentations, discussions, or individual critiques on the project as needed. Digital media are the major means of exploration of new ways of design and acquiring new methods and techniques.

Attendance (05%): The Attendance Grade is based on a scale of 100. 7 points will be subtracted from this grade for every absence, since there is no way for the student to participate in a dialogue or discussion after it has happened, there are no make ups for any absences.

Weekly Grades (05%). Weekly Grades consists of two components Exercises and Preliminary Reviews. Exercises and Preliminary Design Reviews are graded on a 100 base rubric with varying grading criteria.
Exercises: short quick exercises given during class or overnight.

Examples:
- Structural analysis diagrams.
- Theory Reading Statements.

Preliminary Design Reviews: preliminary reviews and discussion on the design process of a project. Penned up and discussed during class.

Examples:
- Design Development Reviews.

Assignments (20%): The final conclusion to one or more exercises. Work is given over a period of days or weeks. Grading Criteria for Assignments are specific to the assignment. See the Grading Sheet for the Assignment for details. Below is a list of the typical Assignments given during a semester.

1. A01-Base Building Typology Study.
2. A02-Office Building Program.
3. A03-Low-Energy Building Precedent.
4. A04-Conceptual Design Proposal
5. A05-Schematic Design Drawings
6. A06-Enclosure&Shading System Design
7. A07-Design Argument

Projects (70%): Architectural design projects are a final design culmination of exercises, assignments and preliminary reviews, involving several weeks of work. There are five major Grading Criteria for Projects – Aesthetics, Tectonics, Programming, Communication and Scholarship. An example of the Grading Criteria and Project Grading Sheet can be reviewed in Attachment A. There will be three project grades. They are Conceptual Design Review (10%); Schematic Design Review (15%); and a Final Design Review (45%) at the end of the semester.

Required Text Books
Building Structures Illustrated, Ching, et.al., Wiley, 2009. (Ching01)
Building Codes Illustrated, Ching, et.al., 3rd edition, Wiley, 2009. (Ching03)

Required Software
REVIT 2015
Sketch-Up
Rhino 5.
Climate Consultant 5.5, Murray Milne, software, UCLA, 2012. (Climate Consultant)

Required Equipment: Architecture tri-scale, 12” roll trace paper, Pilot fine point pen (similar), Fine point Sharpie (similar), Mechanical pencil, and Eraser.
Print Resources
The College of Architecture has very good printing resources. See: http://www.arch.ttu.edu/resources/print_bureau/. However there are about 650 architecture students enrolled and all of them typically have some printing to do. So plan ahead. Especially during midterm and at the end of the semester check out printing hours and don't wait until last minute to print your work.

COURSE POLICIES AND PROCEDURES:

Submittal of Late Work. All assignments and projects are due on the day and at the time specified by the instructor. Assignments submitted late without prior notice to the Instructor may receive an F. Late submittals will only be accepted without prior notice to the instructor. However, the grade for the late submission will be **reduced 10 points every 24 hours** the work is late.

Project Reviews
*Students are expected to have committed analog and digital exploration and representation of a completed thought for each studio day. Superficial or minor changes to a project and individual phases, or merely verbal descriptions will not be critiqued.* (Bennett Neiman) You must have adequate graphical documentation to back up your ideas and a significant amount of new work displayed in order to receive criticism.

Studio Culture
Expect to spend a significant amount of time working on your studio project outside of class time. In class contact time is 10.5 hours. Outside time is expected to be a minimum of 2 times class contact time or 21 hours. Therefore, you should expect to spend upwards of 30 hours a week on this studio. It is strongly suggested that you get into the habit of working in the studio after hours.

Also here is a link to the College of Architecture wide [Studio Culture Policy](http://arch.ttu.edu/w/images/a/a8/Studio_Culture_Policy.pdf).

Attendance Policy
All 3502 studios meet MWF, 1:00—4:20 pm, in assigned studio spaces. The College of Architecture follows the class attendance policy set out in the Undergraduate/Graduate Catalog, 2011-2012. The college supports the definition of four absences as being excessive and constitutes cause for having the student drop the class or receive a grade of “F”. **You, the student, must bear the responsibility for keeping track of your own attendance.**

Students in the college are expected to attend all scheduled class meeting times and activities (lectures & lab/studio sessions). Absences in excess of those stipulated above will result in an F. Refer to the university’s policy, procedures, and dates on dropping a course. See your academic advisor for additional information.

Absence due to officially approved trips: The Texas Tech University Catalog states that the person responsible for a student missing class due to a trip should notify the instructor of the departure and return schedule in advance of the trip. The instructor so notified must not penalize the student, although the student is responsible for material missed. Students absent because of university business must be given the same privileges as other students (e.g., if other students are given the choice of dropping one of four tests, then students with excused absences must be given the same privilege).
**Classroom Civility**
Students are expected to assist in maintaining a classroom environment that is conducive to learning. In order to assure that all students have the opportunity to gain from time spent in class, unless otherwise approved by the instructor; students are prohibited from engaging in any form of distraction. Inappropriate behavior in the classroom shall result, minimally, in a request to leave class. Students whose behavior is in conflict with maintaining an environment conducive to learning during a lecture class or discussion section will be asked to leave the classroom. Re-admittance is at the instructor’s discretion.

**Computers**
Latest student computer minimum specifications are available at [http://www.arch.ttu.edu/architecture/computers.asp](http://www.arch.ttu.edu/architecture/computers.asp) Technical difficulties, viruses, crashes, server and print bureau problems, or corrupted files **will not** be accepted as legitimate excuse for the failure to complete ones work. **ALL WORK SHOULD BE CONTINUOUSLY SAVED AND REGULARLY BACKED UP.** All work must be printed before class to be considered timely. Class time will not be used for printing.

**Final Documentation**
All models digital and physical, drawings will be documented in high quality digital forms for the end of the semester. This will be weighted with the rest of the semester’s work towards the final grade.

**Student Work Rentention**
The College of Architecture reserves the rights to retain, exhibit, and reproduce work submitted by students. Work submitted for grade is the property of the college and remains as such until it is returned to the student. For exhibition purposes keep all material available for the instructor at the end of semester.

**Accommodations**
"Any student who, because of a disability, may require some special arrangements to meet course requirements should contact the professor, at (806) 742.3136, to make necessary accommodations. Students should present appropriate verification from the Disabled Student Services, Dean of Students Office. No requirement exists that accommodations be made prior to completion of this approved University process." [TTU-Faculty Handbook, August 2014].

**Equal Opportunity and Access to Facilities.**
"The University is committed to the principle that in no aspect of its programs shall there be differences in the treatment of persons because of race, creed, national origin, age, sex, or disability, and that equal opportunity and access to facilities shall be available to all. If you require special accommodations in order to participate, please contact the instructor. Students should present appropriate verification from Student Disability Services Office, 335 West Hall Telephone: 806 742-2405. No requirement exists that accommodations be made prior to completion of this approved University process.

**Academic Integrity.**
It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and a high standard of integrity. The attempt of students to present as their own any work that they have not honestly performed is regarded by the faculty and administration as a serious offense and renders the offenders liable to serious consequences, possibly suspension.
The instructor in a course is responsible for initiating action for dishonesty or plagiarism that occurs in his or her class. In cases of convincing evidence of or admitted academic dishonesty or plagiarism, an instructor should take appropriate action. Before taking such action, however, the instructor should attempt to discuss the matter with the student. If cheating is suspected on a final exam, the instructor should not submit a grade until a reasonable attempt can be made to contact the student, preferably within one month after the end of the semester. See the section on “Academic Conduct” in the Code of Student Conduct for details of this policy. As per College and University policy, academic dishonesty or plagiarism may result in an "F" grade for the semester.

“Scholastic dishonesty” includes, but is not limited to, cheating, plagiarism, collusion, falsifying academic records, misrepresenting facts, and any act designed to give unfair academic advantage to the student (such as, but not limited to, submission of essentially the same written assignment for two courses without the prior permission of the instructor) or the attempt to commit such an act.

"Cheating" includes, but is not limited to, the following:
1. Copying from another student’s test paper.
2. Using materials during a test that have not been authorized by the person giving the test.
3. Failing to comply with instructions given by the person administering the test.
4. Possessing materials during a test that are not authorized by the person giving the test, such as class notes or specifically designed “crib notes.” The presence of textbooks constitutes a violation only if they have been specifically prohibited by the person administering the test.
5. Using, buying, stealing, transporting, or soliciting in whole or part the contents of an unadministered test, test key, homework solution, or computer program.
6. Collaborating with or seeking aid or receiving assistance from another student or individual during a test or in conjunction with an assignment without authority.
7. Discussing the contents of an examination with another student who will take the examination.
8. Divulging the contents of an examination, for the purpose of preserving questions for use by another, when the instructor has designated that the examination is not to be removed from the examination room or not to be returned to or kept by the student.
9. Substituting for another person, or permitting another person to substitute for oneself to take a course, a test, or any course-related assignment.
10. Paying or offering money or other valuable thing to, or coercing another person to obtain an unadministered test, test key, homework solution, or computer program, or information about an un-administered test, test key, homework solution, or computer program.
11. Falsifying research data, laboratory reports, and/or other academic work offered for credit.
12. Taking, keeping, misplacing, or damaging the property of the university, or of another, if the student knows or reasonably should know that an unfair academic advantage would be gained by such conduct.

“Plagiarism” includes, but is not limited to, the appropriation of, buying, receiving as a gift, or obtaining by any means material that is attributable in whole or in part to another source, including words, ideas, illustrations, structure, computer code, other expression and media, and presenting that material as one’s own academic work. Any student who fails to give credit for quotations or for an essentially identical expression of material taken from books, encyclopedias, magazines, Internet documents, reference works or from the themes, reports, or other writings of a fellow student is guilty of plagiarism.
“Collusion” includes, but is not limited to, the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any section of the rules on scholastic dishonesty.

“Falsifying academic records” includes, but is not limited to, alter-ing or assisting in the altering of any official record of the university, and/or submitting false information or omitting requested information that is required for or related to any academic record of the university. Academic records include, but are not limited to, applications for admission, the awarding of a degree, grade reports, test papers, registration materials, grade change forms, and reporting forms used by the Office of the Registrar. A former student who engages in such conduct is subject to a bar against readmission, revocation of a degree, and withdrawal of a diploma.

“Misrepresenting facts” to the university or an agent of the university includes, but is not limited to, providing false grades or résumés; providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment for the purpose of obtaining an academic or financial benefit for oneself or another individual; or providing false or misleading information in an effort to injure another student academically or financially.

SHOP USE
During the semester, you will most likely use the ARCHITECTURE SHOP in room 03 on the courtyard level of the College of Architecture Building. Prior to entering the shop, it is mandatory that you:
Read the TTU-College of Architecture-Shop Rules on the Web.

Print and sign the page: “TTU-COA- Health and Safety Statement”

Bring the signed release form to the Receptionist Secretary of the COA on the 10th Floor of the Architecture Building (AH) and obtain from here a sticker on your current student I.D. card

EYE PROTECTION
Per OP60.10 in the TTU Operations Manual, all architecture students must use eye protection (goggles) when using Xacto knives or other sharp objects. In addition, these must be disposed of in appropriate containers clearly marked as containing “sharp objects”. See the following for more information: http://www.depts.ttu.edu/opmanual/OP60.10.pdf

TOBACCO AND AEROSOL USE
Smoking or other uses of tobacco, the use of spray paint or aerosol products of any kind are not permitted anywhere in the Architecture Building. There is a designated smoking area outside in the courtyard near the bridge. The stairwells are not to be used for smoking or painting.
ATTACHMENT A

Grading Criteria:

Your Project will be graded on the Graded Criteria listed below using the attached grading sheet. Please make sure you study the grading criteria and that your design and presentation of it communicates effectively the grading criteria. (See the following Project Grading Criteria)

Project Grading Criteria.

A-4 Superior/Excellent - Accurate and complete work that exceeds the level and requirements requested by the instructor in multiple areas. Consistently showing scholarly initiative, innovation, attempts, discrimination and discernment.
B-3 Above Average - Accurate and complete work meeting the requirements of the instructor, and exceeding the level requested in a few. Often showing scholarly initiative, innovation, attempts, discrimination and discernment.
C-2 Average - Accurate and complete work meeting the requirements of the instructor and requiring minimal corrections. Work satisfactory, but needs improvement. Inconsistently showing scholarly initiative, innovation, attempts, discrimination and discernment.
D-1 Unsatisfactory - Work that is often inaccurate or incomplete, not meeting the minimum requirements of the instructor. Rarely showing scholarly initiative, innovation, attempts, discrimination and discernment.
F-0 Unacceptable - work that is unacceptable therefore not defined.

Project Grades will be determined by the separate categories listed on the ATTACHED grading sheet. You will receive points for each category ranging from 0 - 4. How many points you receive will be based on the performance criteria ABOVE.

Among those categories for your grade there is one called scholarship. Scholarship is “the methods, discipline, and attainments of a scholar”. Specifically in this context it is the scholarly attributes of a good student. Below are the seven scholarly characteristics and their definitions which will be the basis of this portion of your grade.

Scholarship:

Discrimination - The power of making fine distinctions between alternatives.
Initiative - Readiness and ability in initiating action without out prodding.
Class participation - the fact of taking part in the class, as in some action or attempt
Discernment - The act or process of exhibiting keen insight and good judgment.
Exploration - The careful systematic investigation of the unknown.
Innovative - The introduction of something new resulting from study and experimentation.
Attempts – Making an effort to perform, make, or achieve results multiple times.
Acumen- the ability to make good judgments and quick decisions, typically in a particular domain
GRADING CRITERIA: [EXAMPLE]

EXAMPLE GRADING SHEET
Your grade will be determined by the five (5) separate categories listed below. You will receive points for each category ranging from 0 - 4. How many points you receive will be based on the grading criteria on the next page.

<table>
<thead>
<tr>
<th>NAME:</th>
<th>DATE:</th>
<th>GRADE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 - 98</td>
<td>16 - 88</td>
<td>12 - 88</td>
</tr>
<tr>
<td>19 - 96</td>
<td>15 - 86</td>
<td>11 - 76</td>
</tr>
<tr>
<td>18 - 94</td>
<td>14 - 84</td>
<td>10 - 74</td>
</tr>
<tr>
<td>17 - 90</td>
<td>13 - 82</td>
<td>9 - 72</td>
</tr>
</tbody>
</table>

COMPOSITION:
0 1 2 3 4
The organization or grouping of the different parts of a work of art so as to achieve a cohesive and unified whole. The integration of Firmas, Utilitas, and Venustas.
Firmness/Structure Utility/Programming Beauty/Aesthetics

TECTONICS:
0 1 2 3 4
The construction or making of architecture. The science and poetics of a work of architecture’s structure, joinery, and assembly of materials.
Span Joints Structure Enclosure Integration Spatial Quality

PROGRAMMING:
0 1 2 3 4
The process of seeking out and defining the requirements that must be met in order for the design solution to be socially and culturally successful.
Analysis Building Systems Activities Site Function Codes

COMMUNICATION:
0 1 2 3 4
The verbal and graphic communication of the project.
Representation Communication Composition Graphic Quality Content Clarity

SCHOLARSHIP:
0 1 2 3 4
The scholarly attributes of a good student.
Discrimination Initiative Participation Discernment Exploration Acumen Innovativeness Attempts